

Completed Return on Investment Project Case Study

United States Department of Energy
Office of Environmental Management
Fact Sheet

Oil is Baked Off with an Oven

Los Alamos National Laboratory

Original Problem

Before asphalt aggregate is used at LANL for construction, samples are tested to determine the percentage of asphalt oil in the sample. In the past, the testing process involved soaking and rinsing the samples with Stoddard solvent. Stoddard solvent is flammable and was disposed of as hazardous waste every month. The soaking process caused occasional exposure to the technicians despite the precautions taken.

The Project Solution

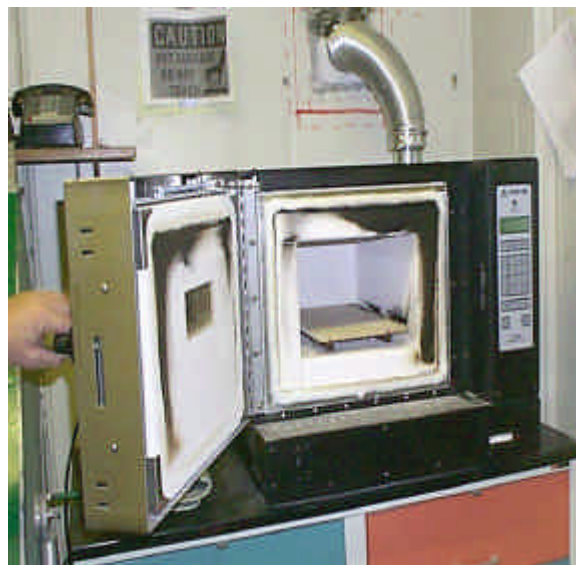
A binder oven was installed at the Material Testing Lab that can test asphalt samples without solvent. The binder oven creates no hazardous waste and provides more accurate results more quickly with less effort. The heat from the binder oven removes the oil from the sample, and the final sample weight can be compared with the original to determine the percentage of oil.

Value of Improvement

The Material Testing Lab no longer needs to purchase Stoddard solvent or dispose of it as hazardous waste. Samples can be prepared for testing about three times faster with the oven, and savings on labor are over \$20,000 annually. Employees are free to work on other activities while the samples are in the oven since it does not require as much oversight as the old solvent-based process. Materials with flaws can be identified more quickly, and employees are no longer exposed to any solvent vapors.

Lifecycle Waste Reduction

Lifecycle Waste Reduction	55gal solvent /year
Commencement Date	2002
Project Useful Life (Years)	5



DOE Monetary Benefits

Total Project Cost	\$10,000
Lifecycle Savings	>\$20,000 / year
Return on Investment	58%

Benefits At-A-Glance

- Solvent no longer has to be purchased, stored, or disposed of as waste.
- Samples can be prepared three times faster with the oven, reducing labor costs and identifying non-conforming materials more quickly.
- No risk of solvent exposure.

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	Summary Data
Priority Area:	Waste Minimization Projects
Project Type:	Source Reduction
Total Project Cost:	\$10,000
Lifecycle Savings:	>\$20,000 per year in reduced labor, waste disposal, and solvent procurement.
Implementing Group:	Material Testing Lab
Benefiting Group:	Material Testing Lab
Useful Life Years:	5
Return on Investment:	58%
Lifecycle Waste Reduction:	~55gallons of spent Stoddard solvent annually
Project Contact:	Randy Teel
Phone:	(505)665-0868
Email:	rteel@lanl.gov
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